Keep Walking?

Geographical Proximity, Religion, and Relationship Banking

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Abstract

We investigate the geographical proximity of firms to their relationship banks. We find that Islamic banks are more remote to their borrowers. We also find that the probability for a firm to connect to a bank substantially decreases in distance, but that the choice along bank characteristics determines how potent distance is in its impact. If the bank in the vicinity is an Islamic bank, distance plays a more muted role, especially in cities with a high conservative party vote and higher trust in religious institutions. Overall, these findings suggest that the presence of banks with certain characteristics in the vicinity may determine the within-firm and across-firm configurations of observable firm-bank connections. (112 words)

Keywords: geography of banking, Islamic banking.

JEL: G21, L1.

I. Introduction

Geographical proximity and repeated interactions between firms and banks are commonly perceived to be the two most defining characteristics of the small business lending market. Degryse and Ongena (2004) for example observe that despite all technological developments in information collection and processing "distance is far from dead" in small business banking.[1] At the same time relationships between firms and their financiers are deemed crucial for both firms and banks, and by now a very large literature has modeled and documented the existence, importance and dimensions of relationships between firms and banks—for example in time, scope and intensity.[2]

Not yet investigated, however, is the geographical proximity of firms to *different* lenders, and correspondingly how different bank characteristics, in particular bank *orientation*, i.e., Islamic versus conventional orientation (e.g., Abedifar, Molyneux and Tarazi (2013) and Beck, Demirgüç-Kunt and Merrouche (2013)), may play a role in determining the firms' decisions to *engage different banks* across shorter or longer distances. This intersection between bank geography and bank type has been left mostly unexplored. In this paper we gauge the importance of the interaction between geographic proximity and bank orientation for the choice of bank-firm relationships by combining several unique databases. Specifically, we

[1] See also Petersen and Rajan (2002), Berger, Miller, Petersen, Rajan and Stein (2005), Degryse and Ongena (2005), Brevoort and Hannan (2006), Mian (2006), Alessandrini, Presbitero and Zazzaro (2009), Degryse, Laeven and Ongena (2009), and Agarwal and Hauswald (2010), among many others, and reviews in, e.g., Degryse and Ongena (2008b), Cerqueiro, Degryse and Ongena (2009) or Degryse, Kim and Ongena (2009).

[2] Following Petersen and Rajan (1994), Berger and Udell (1995) and Petersen and Rajan (1995), among others. Boot (2000), Ongena and Smith (2000a)), Elyasiani and Goldberg (2004), Degryse and Ongena (2008a) and Degryse, Kim and Ongena (2009), among others, review this literature, while Ongena and Smith (2000b), von Rheinbaben and Ruckes (2004), Ongena, Tümer-Alkan and Vermeer (2011), among others, study the number of bank relationships. The important and positive role of relationships has been reinforced during the recent Global Financial Crisis that has shown the importance of relationship-based lenders for continued lending during an aggregate credit crunch (Casey and O'Toole (2014), Sette and Gobbi (2015), Bolton, Freixas, Gambacorta and Mistrulli (2016), Beck, Degryse, De Haas and van Horen (2018)).

exploit the rich variation in geographic bank branch distribution and bank orientation present in Turkey.[3]

The Turkish economy provides excellent opportunities to assess the relationship between distance and bank orientation. Our unique self-constructed dataset couples the complete and geo-coded branch network structure of all banks with a representative sample of firms that comes with their precise geo-coded location and all their primary firm-bank connections. Critically, Turkey has banks with either an Islamic or a conventional orientation. Moreover Turkey`s banking sector is diversified, containing banks of different sizes, nationality and ownership. And, as the Turkish economy is very multi-faceted and dynamic, there is a large variation within the firm population, in terms of their location, number of bank connections, size, age and industry.

The geographic distance between bank and borrowers has been explored extensively in the economic literature. Banks that are closer to their clients have a better capacity to screen and monitor their clients as they have access not only to hard information, such as financial information, or hard assets as collateral, but also to soft information, such as the personal character of the firm`s owner (Liberti and Petersen (2017)). However, closer distance might give the bank also a competitive advantage, especially in more concentrated banking markets. Borrowers incur higher transportation costs if engaging a bank whose branch is further away; this in turn might lead to price discrimination by banks across borrowers with different

[3] The matching that occurs between firms and banks has been studied by Berger et al. (2005), Mian (2006), and Schwert (2018) for example. The first paper documents that large banks in the US mainly lend to large firms (employing predominantly hard information in the loan decision process), the second paper shows that foreign banks in Pakistan establish relationships with large and visible firms, while the third paper shows that "bank-dependent firms borrow from well capitalized banks, while firms with access to the bond market borrow from banks with less capital." Ongena and Şendeniz-Yüncü (2011) also documents a strong but varied correspondence between firm characteristics and bank type. Because the dataset employed in this paper augments theirs we will discuss their paper in more detail later.

distances to the bank, with clients closest paying the highest rate. While the literature has focused on distance as important element in bank-borrower relationships, its interaction with the religious orientation of the banks has not been explored yet.

Islamic finance fundamentally differs from conventional finance along several dimensions. Specifically, Sharia-compliant finance does not allow for the charging of interest payments (*riba*), as only goods and services are allowed to carry a price, does not allow for speculation, and prohibits financing of specific illicit activities. At the same time, Sharia-compliant finance relies on the idea of profit- and loss- and thus risk-sharing (and is thus sometimes also referred to as participation finance), on both the liability and asset side and posits that all transactions have to be backed by a real economic transaction that involves a tangible asset.

On the one hand, and most importantly, the appeal of Islamic banks to borrowers whose religious beliefs make them reluctant to use conventional finance might make them more attractive for these borrowers even when they are further away from Islamic branches. On the other hand, Islamic banks may put a heavy emphasis on close relationships with their clients. This would imply that Islamic banks could rely on geographic proximity as a means of maintaining such relationships and could end up rationing far-flung applicants. Which effect dominates is the empirical question we aim to address in this paper.

Our empirical analysis provides two main insights. First, we find that firms have connections with banks whose closest branch is on average 1.7 kilometers away. But compared to the average branch that a given firm has decided to have a relationship with (i.e., within-firm), Islamic banks are substantially further away. We also find that the distance effect of Islamic banks is stronger in areas with higher vote shares for the governing conservative party and higher trust in religious institutions (based on household survey results). Taken together these results suggest that for (small) Islamic banks proximity strengthens relationship engagement,

but that for the customers stronger beliefs make a longer distance to the Islamic bank worth travelling.

Second, we find that the probability for a firm to connect to a bank substantially decreases in the distance to this bank's nearest branch, but that the choice along bank characteristics determines how potent distance is in its impact. For example, an increase in distance from 0 to 10 kilometers decreases the probability a bank is engaged by more than 7 percentage points (this is for a given firm-specific probability of engagement, i.e., controlling for firm fixed effects); this is a large effect given that the unconditional probability a firm engages the closest branch of any bank equals 7 percent. But, if the bank in the vicinity is an Islamic bank, distance plays a more muted role. Important to note is that the distance between bank and firm might be driven both by demand (i.e., firm-level) and supply-side (i.e., bank-level) factors. We therefore rely again on within-firm variation in the distance to different banks and confirm most of our findings.

Overall, these findings suggest that the presence of banks with an Islamic or conventional orientation in the vicinity of firms may determine the across-firm and within-firm configurations of observable firm-bank connections. Indeed we show that Islamic financial products are sufficiently attractive for certain borrowers that they are willing to take into account longer distances to access these banking products. In this respect our study once more stresses the point that at least in corporate retail banking distance is "far from dead" and that policy should aim not to impede the physical presence of a variety of financial institutions.

Our paper relates to two different strands of literature. First, and most importantly, our paper relates to a small but rapidly growing literature on Islamic banking (which Alzahrani and Megginson (2017) reviews). For a large cross-country sample Abedifar, Molyneux and Tarazi (2013) for example find evidence that Islamic banks have lower credit risk and are more stable

than conventional banks, and that their loan quality is less responsive to domestic interest rate shocks, while for a similar sample Beck, Demirgüç-Kunt and Merrouche (2013) find that Islamic banks are less cost-effective, but have a higher intermediation ratio, higher asset quality and are better capitalized, which also explains their better performance during the recent crisis (see also Čihák and Hesse (2010), Pappas, Ongena, Izzeldin and Fuertes (2016), Berger, Boubakri, Guedhami and Li (2017) and Choudhary and Limodio (2017), among others). For Pakistan Baele, Farooq and Ongena (2014) find lower defaults for Islamic than for conventional loans even among the same borrower and same bank, while for Turkey (and related in part of the sample to this paper) Ongena and Şendeniz-Yüncü (2011) find that Islamic banks mainly deal with young, multiple-bank, industry-focused and transparent firms.

Second, our paper relates to an extensive theoretical and empirical literature on the importance of geographic proximity for borrower-bank relationships. Petersen and Rajan (2002) document an increasing distance between borrowers and banks in the U.S. and relate this to the increased use of technology in the U.S. banking system. Degryse and Ongena (2005), on the other hand, do not find an increase in distance between bank and borrowers for Belgium.[4] This literature has also explored variation across different bank types. Smaller banks might rely more on relationship lending and thus soft information and therefore have to be closer to the client. Larger and foreign-owned banks, on the other hand, rely more on hard(ened) information and

[4] Extant work on bank branch proximity studies the effects of bank distress and/or mergers − and subsequent local branch reconfigurations and closures − on local development and crime (Garmaise and Moskowitz (2005)) and in general on competition, borrowers` access to credit and switching behavior (e.g., Kim and Vale (2001), Cerasi, Chizzolini and Ivaldi (2002), Sapienza (2002), Degryse, Masschelein and Mitchell (2011), Temesvary (2015)) and welfare (Slovin, Sushka and Polonchek (1993), Karceski, Ongena and Smith (2005)). On (de-)branching itself see e.g., De Juan (2003), Cerutti, Dell'Ariccia and Martínez Pería (2007), Coccorese (2012), and recently Martin-Oliver (2016), Bonfim, Nogueira and Ongena (2017) and Qi, De Haas, Ongena and Straetmans (2017).

can therefore afford to be geographically further away from their clients (e.g., Berger et al. (2005)).

The rest of the paper proceeds as follows. Section II introduces the hypotheses, data and summary statistics on bank geography and connections and motivates each of the individual bank and firm variables employed in our empirical specifications. Section III discusses the methodology and estimates when analyzing the distance between firms and their connected banks. Section IV does the same when analyzing the impact of distance on the probability firms establish connections with their banks. Section V summarizes the findings, discusses policy implications and concludes.

II. Data and Summary Statistics

A. Hypotheses

We surmise that Islamic banks appeal to borrowers whose religious beliefs make them reluctant to use conventional finance and that this appeal might make them more attractive for these borrowers even when they are further away from Islamic branches. For borrowers whose religious beliefs are more intense the branch of the connected Islamic bank may even be further away. Given this point of departure we conjecture that:

Hypothesis 1. If a firm has an Islamic bank among its connected banks, the distance between the firm and the closest branch of this Islamic bank will be larger than the average distance (or at least not shorter than the minimum distance) between the firm and the closest branches of other connected conventional banks.

Hypothesis 2. This distance differential between Islamic and conventional banks will be increasing in the religiosity of the firm owners and managers.

A necessary pre-cursor for these hypotheses is that when it comes to engaging a bank, distance will play less of a role in reducing the likelihood an Islamic bank will be chosen. And once more this mitigation may be strengthened by religiosity.

Hypothesis 3. The distance between a firm and the closest branch of a bank will reduce the probability that a bank is selected (as a connected bank), but less so for an Islamic bank than for a conventional bank. This distance becomes even less important if the religiosity of the firm owners and managers is increasing.

We now plan to test these three hypotheses with a novel combination of datasets and an appropriate methodology.

B. Data Sources

Turkey's banking system is diverse not only in terms of religious orientation, but also in terms of size, nationality, and ownership. As of November 2009, the Turkish banking system included 49 banks: 4 Islamic participation banks, 31 commercial banks, 13 investment banks, and 1 bank managed by the Savings Deposit Insurance Fund (SDIF).[5] Among these 49 banks, 24 are foreign-owned banks established as either subsidiaries or new branches in Turkey.[6] All these entities are supervised by the Banking Regulation and Supervision Agency (BRSA),

[5] See http://www.bddk.org.tr for detailed information on the Turkish banking system.

[6] In addition, there are 44 representative offices of foreign banks that provide mainly non-transactional operations and are therefore not included in the analysis.

which was established in June 1999. The financial sector in Turkey was also relatively stable prior to 2009.[7]

Our analysis is based on the merger of two unique databases. Brick-and-mortar branches define the physical presence of banks in Turkey as in most developing and emerging countries. We therefore obtain a comprehensive list of all bank branches in Turkey and geo-code their addresses. On the bank side, our sample consists of 9,546 bank branches, which includes 560 from Islamic banks.[8] On the firm side, our data source is a directory of firms distributed by *Kompass*. Kompass provides entries for over 2 million firms in 70 countries including firm address, executive names, industry, turnover, date of incorporation and, also important for our purposes, the firms' primary bank relationships.[9] Kompass relies on information provided by the Chambers of Commerce and firm registries across different countries. Giannetti and Ongena (2012) were among the first to use this dataset in their investigation of which borrowers are able to benefit from a foreign bank presence in Eastern European emerging markets (see also Ongena, Peydró and van Horen (2015) and recently Kalemli-Özcan, Laeven and Moreno (2018)).

[7] The Turkish banking system experienced quite a volatile environment during the 1990s though (see e.g., Ongena and Şendeniz-Yüncü (2011) for a concise summary). Zenginobuz and Mumcu (2005) analyze the mergers and acquisitions taking place in the Turkish banking sector post-crisis and Damar (2007) investigates the impact of this post-crisis bank consolidation on the branching patterns in Turkey.

[8] The number of branches of Islamic banks grew by only 6 percent from 530 in 2008, so Islamic banks were seemingly not in the middle of a big bank branch opening drive. See Burgess and Pande (2005) for a study of such a (state-led) drive in India.

[9] This information is unique. Bureau van Dijk's *Orbis* database for example does not provide bank connections for Turkey.

We obtain the firm directory for Turkey for the year 2008.[10] This particular directory was also used in Ongena and Şendeniz-Yüncü (2011). It contains 10,170 complete firm records. One quarter (2,511) of these firms reports they have no lending relationship with a bank,[11] while three quarters (7,659) of the firms report the identity of at least one bank. Among the firms with banking relationships almost one-third (2,354) report 1 relationship, while the remaining two-thirds (5,305) report multiple relationships, ranging between 1 and 14. The average firm reports more than 2.[12] In total there are 29 different banks mentioned.

Our sample is observationally representative by region and industry, but our sample firms are on average larger than those in the universe in Turkey. Indeed, our sample firms employ in total almost 1,500,000 persons (i.e., around 150 persons per firm), or more than 5 percent of the around 20,000,000 workers in Turkey, but our sample firms comprise less than 1 percent of the universe of the around 1,750,000 Turkish firms. Given that typically more hard information is available for large than for small firms, the absolute and relative firm-bank distances will be less relevant for our sample firms, making our estimates *conservative*. In addition, larger firms typically are more likely to have multiple bank relationships, making our

[10] While Turkey was somewhat affected by the Global Financial Crisis, the effect was relatively less severe than in other European countries. Laeven and Valencia (2012) does not show Turkey as having a systemic banking crisis.

[11] Similarly, an independent survey by the European Bank for Reconstruction and Development and World Bank called Business Environment and Enterprise Performance Survey (BEEPS) reports that in 2008, 39 percent of the firms in Turkey did not have a loan or credit line from a bank. Across the 13 emerging economies in Giannetti and Ongena (2012) the identity of the registered firms' banks in Kompass is reported for only one quarter of the firms. Also in their case, BEEPS reports similar proportions.

[12] The way in which Ongena and Şendeniz-Yüncü (2011), Giannetti and Ongena (2012), and our study identify bank relationships is therefore similar to Ongena and Smith (2001), Karceski, Ongena and Smith (2005), and Ongena and Smith (2000b) for example. While the relationship between a firm and the reported primary banks may have many aspects and involve a variety of products, the banks reported by firms in our sample are most likely not lead managers or participants in loan syndicates. As in other emerging markets, the syndicated loan market provides only a tiny amount of financing, even for the largest corporations in Turkey. Note also that since 1951 Turkey has a public credit registry maintained by the Central Bank of Turkey to which key credit information about many firms is reported (Miller (2003)). Strategic reporting or omissions of bank relationship information is pointless if the registry information can also be easily verified by others.

within-firm estimations more *representative*. Finally, most sample firms are medium-sized, which implies that they have likely at most only a few establishments and report an address where the executives are based and the financial and strategic decisions are made, rendering our estimates *less confounded*. In any case, we will also report robustness exercises for those firms in our sample that report fewer than 50 employees (which splits the sample almost in two and is also a natural cutoff above which certain additional labor requirements bind).

C. Measures of Distance

Based on the bank and firm geo-codes we calculate great-circle distances, which are the shortest distance in kilometers between two points on Earth along its surface (i.e., "as the crow flies" and in our application calculated with a 0.5 percent level of precision) for various configurations.[13] Table 1 provides the summary statistics.

[Table 1 around here]

We use these distance measures to compute three different measures of distance. First, we calculate the distance between each firm and the closest-by branch of each of the 29 banks in our sample. We correspondingly have 221,937 bank-firm combinations. Row (1) of the upper panel reports the descriptive statistics for this variable *firm-branch distance*. The median distance equals 1.5 kilometers,[14] while the mean equals 12.6 kilometers.

[13] The correlations between this measure and various other distance measures such as travel distance or time of travel are typically found to be above 90 percent (e.g., Degryse and Ongena (2005)). In addition, we will be mainly interested in the differences between various firm-bank distances making the actual choice of distance measure even less important.

[14] These short but economically relevant distances between firms and bank branches are consistent with findings for Belgium (Degryse and Ongena (2005)), Norway (Herpfer, Schmidt and Mjøs (2017)) and the U.S. (Petersen and Rajan (2002),Brevoort and Hannan (2006), Agarwal and Hauswald (2010)) for example.

Second, we condition on the firm having a connection with the bank, thus gauging the *firm-related branch distance*. In row (2) we report that for the 15,918 observed bank-firm pairs, the median distance equals 700 meters, while the average distance is 1.7 kilometers.

Finally, we calculate the distance between each of the 7,653 sample firms and the bank branches that are closest, unconditionally,[15] to the firm, a variable we call *firm-closest branch distance*. For all banks we report the summary statistics in row (3) in the upper panel. The number of observations equals 11,623, which is larger than 7,653 because some bank branches are located very close to each other in which case their distance to the firm will be calculated to be the same (due to the resolution of the raw address data and the geocoding procedure, two or more bank branches may have the same coordinates if they are in the same building for example).

We find that many firms are located very close to a bank branch. The median firm is only 200 meters away from a bank branch, while the average distance is 600 meters. But there is a substantial variation with one firm 55 kilometers away from the closest bank branch. The fact that, on average, the branch of the bank with which a firm has a lending relationship is farther away than the closest branch suggests that distance is only one of the factors that may determine bank choice, i.e., firms do not only engage a bank branch because it is closest-by.

Next, we split all banks into two groups, Islamic and conventional banks, because the Islamic character of a bank could potentially increase its appeal across larger distances. A bank is

[15] That is the closest branch in the vicinity not conditioning on taking: the closest branch from all banks, as in measure 1, or the closest branch from all relationship banks, as in measure 2.

defined to be Islamic if the bank declares itself to be a participation bank that carries out banking activities based on the principle of profit and loss participation.[16]

We find that while unconditionally firms and Islamic versus conventional banks are equally distant (the values for *firm-closest branch distance* are 0.5 versus 0.6, and 0.3 versus 0.2 kilometers in mean and median, respectively), conditioning on a bank-firm connection being observed Islamic banks are substantially more distant (the values for *firm-related branch distance* are 3.3 versus 1.7, and 1.2 versus 0.7 kilometers, respectively). This is first tentative evidence that firms may be prepared to engage an Islamic bank over a longer distance.

D. Bank Orientation and Other Characteristics and Firm-Bank Relationships

Table 2 provides the total number of firms that have a connection with an Islamic or conventional bank, or both. There are 52 firms that engage Islamic banks only, 7,371 firms engage conventional banks only, and 230 firms have relationships with both Islamic and conventional banks (hence the total number equals 7,653).[17]

[Table 2 around here]

In addition to bank orientation (i.e., Islamic versus conventional), we can distinguish between three other bank characteristics: bank size, nationality, and ownership.[18] We split the banks

[16] Source: www page of the "Participation Banks Association of Turkey", http://www.tkbb.org.tr.

[17] Notice that in total 282 firms (= 230 + 52) engage an Islamic bank while there are in total 306 firm – Islamic bank connections (see Table 1).

[18] The theoretical and empirical literature also provides predictions on the effect of other bank characteristics on the distance between banks and borrowers. Small and domestic banks rely more on close relationships with their borrowers and soft rather than hard(ened) information in their lending technology. They would therefore rely more on close proximity to their borrowers in their lending business. On the other hand, large and foreign-owned banks rely more on arms-length transaction-based lending techniques, which requires hard(ened) information and hard assets and less soft information and long-standing relationships and therefore less proximity to the client. However, larger banks might also have wider branch networks for deposit collection purposes and might thus be more attractive for clients. For size see, e.g., Demsetz and Strahan (1997) and Kishan and Opiela (2000), for

into two groups according to each bank characteristic (the lower panel of the Table collects the definitions of the bank categorizations). A bank is defined to be *large* if its assets are among the top eight domestic banks at the end of 1998 (one of these banks was closed but the remaining seven still were the top seven domestic banks by assets by the end of 2008). By the size of their assets abroad all foreign banks are also classified as large banks.[19] All other banks are classified as small. A bank is defined to be *foreign* (domestic) if the majority of equity is owned by foreign (Turkish) individuals or institutions while a bank is defined to be *state-owned* (private) if the majority of equity is owned by the government (private individuals or institutions).

Recall that our sample contains 29 banks. Shares of different banks in our sample are as follows: 4 banks are Islamic participation banks and 25 banks are conventional, 20 are large and 9 are small; 16 are domestic and 13 are foreign; 25 are private and 4 are state-owned banks.

6,869 firms engage large banks only, 93 small banks only, while 691 firms have relationships with both large and small banks. 232 firms engage foreign banks only, 6,088 firms engage domestic banks only, and 1,333 have relationships with both foreign and domestic banks. Finally, 154 firms engage state banks only, 6,613 firms engage private banks only, and 886 have relationships with both. Hence, firms engage banks with a variety of characteristics and each of these characteristics could play a role in determining how distance determines bank choice.

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nationality see, e.g., Detragiache, Tressel and Gupta (2008) and Giannetti and Ongena (2012), and for ownership see, e.g., Berger, Klapper, Martinez Peria and Zaidi (2008) and Cull and Martinez Peria (2013).

[19] Source: www page of the "Banks Association of Turkey", http://www.tbb.org.tr.

E. Methodology

To explore the role played by physical proximity and bank orientation in determining bank choice, we rely on two complementary sets of regression analyses. First, we will explore how within the set of observed bank-firm connections, bank orientation determines the observed physical distances between firm and connected banks. These exercises rely therefore on the 15,918 observed bank-firm connections. Specifically, we use the following regression to gauge the relationship between bank orientation and *firm-related branch distance*:

$$Y_{i,j} = \alpha_i + \beta\ Islamic\ Bank_j + \gamma\ X_j + \varepsilon_i \qquad (1)$$

where $Y_{i,j}$ is the distance in kilometers between firm i and the closest branch j of each of the banks it has a lending relationship with. To take the logarithm we have to add 1 to the calculated distance because some calculated distances equal zero (to make the coefficients more easily readable we multiply by 100). The estimates that we will report in Table 4 and will discussed below in Section III come from ordinary least squares models. We include the bank type dummy, $Islamic\ Bank_j$, singling out Islamic banks, then add firm fixed effects, α_i, other bank characteristics (Large, Foreign and State) in X_j, and subsequently also add interactions of the Islamic Bank dummy with various other characteristics. All independent variables are defined in Table 3 with the summary statistics for the 15,918 observed bank-firm connections in the first set of (five) accordingly labeled columns. In Table 5 we will redefine the dependent variable to equal 100 if the relevant bank has the closest branch of all of the connected banks, and to equal 0 otherwise.

[Table 3 around here]

Second, we will investigate how the actual physical distance combined with bank orientation determines the observed bank choice outcomes. Here we rely on the 221,937 possible pairings of sample firms and the closest branches of each bank in Turkey. Specifically, we run the following regression to gauge if bank orientation determines whether a firm has a relationship with a specific bank or not:

$$Y_{i,j} = \alpha_i + \beta_1 \, ln(Distance)_{i,j} + \beta_2 \, Islamic\ Bank_j + \beta_3 \, ln(Distance)_{i,j} * Islamic\ Bank_j + \gamma \, X_j + \varepsilon_{i,j} \quad (2)$$

where $Y_{i,j}$ is a dummy variable that takes the value one if firm *i* has a relationship with bank *j*. Coefficient β_1 indicates the effect of distance on the likelihood that firm *i* engages bank *j*, coefficient β_2 gauges the effect of bank orientation on the likelihood that firm *i* has a relationship with bank *j* and coefficient β_3 indicates the differential effect across banks with different orientation of distance on the likelihood that firm *i* engages bank *j*. As in regression (1) we use OLS estimation.[20] The estimates will be reported in Table 6 and discussed below in Section IV, and for the 221,937 pairings of firms and closest branches summary statistics are provided in the second set of (five) columns in Table 3.

[20] We employ linear probability models because we include many fixed effects and because we are particularly interested in the estimated coefficients on the interactive terms (see Ai and Norton (2003) and Norton, Wang and Ai (2004), and an application in Brown, Ongena and Yeşin (2011) for example). More parsimonious binary dependent variable models yield qualitatively similar results.

III. Distance to Connected Banks

A. Main Findings: Hypotheses 1 and 2

The results in Table 4 show the importance of bank orientation for the distance between a firm and the banks it has a relationship with. Here we regress *firm-related branch distance* on the Islamic Bank dummy.

[Table 4 around here]

The results in column (1) suggest that Islamic banks are further away from their clients than conventional banks. The result is not only statistically significant at the one percent level, but also of economic relevance. Specifically, the coefficient estimate of 29.2 in column (1) implies (as is indicated in the bottom row of Table 4) that the extra distance to an Islamic bank compared to a conventional bank equals 1.3 kilometers ($=e^{(29.2-1)/100}$), which almost doubles the mean distance that equals 1.7 km. Controlling for firm fixed-effects does not affect the significance or size of the coefficient estimate in column (2), suggesting that even for firms with several bank relationships, one of them possibly Islamic,[21] the distance to the Islamic bank is significantly larger than to the conventional bank.

The results in column (3) show that other bank characteristics which are partly correlated with the Islamic bank dummy are also important for *firm-related branch distance*. Here, we include dummy variables for large, foreign, and state-owned banks, with small and privately-owned domestic banks being the reference groups. We now find that within the set of connected

[21] Rerunning the analysis for the 230 firms that have at least one Islamic and one conventional bank yields similar estimates. We will report a representative and feasible specification in column (8).

banks, Islamic banks are still 1.05 km farther away than conventional banks.[22] In sum, we cannot reject Hypothesis 1 and within the firm`s set of selected banks Islamic banks are geographically farther away, potentially indicating that this bank orientation is more preferred by the firm and therefore the firm may be willing "to walk further" to connect with such banks.

We next use regional variation across Turkey to explore whether the willingness to walk farther is correlated with political beliefs and religious sentiments. Specifically, in column (4) we add an interaction term of *Islamic Bank* with the *Main Conservative Party Vote* which is defined as the percentage of votes in local elections in 2004 received by the Justice and Development Party (Turkish: *Adalet ve Kalkınma Partisi*, AK Parti),[23] which identifies itself as a conservative-democratic party, and an interaction of Islamic Bank and a survey-based indicator of *Trust in Religious Institutions,* using data from the EBRD's Life in Transition Survey (LiTS) undertaken in 2006.[24] We also include regional dummies interacted with the

[22] The unreported coefficients on the other bank characteristics imply that larger banks are on average closer to the firms they deal with, while foreign and state-owned banks are farther away. The different bank characteristics included in the analysis are clearly not exclusive and might interact with each other. A bank can be Islamic and large for example. To start exploring how combinations of characteristics can potentially lead firms to engage less or more remote banks, we interact Islamic Bank with Large Bank. We find that large Islamic banks are farther away from the firms they deal with, while small Islamic banks are closer than conventional banks. This is an interesting finding per se because it shows that although in general firms will pick small banks even when they are farther away, this is not the case for small Islamic banks. Also, while firms typically relate with large banks that are closer to the firm, this is not the case for large Islamic banks, where borrowers are willing to "walk farther".

[23] The same results hold for the general elections that were held in 2007 but these election outcomes may be not so representative of local attitudes and mores and are by their timing naturally less pre-determined. Notice that Islamic banking was well established before AK Parti came to power in November 2002 and therefore individual banks do not have any direct political affiliation. Indeed, in 1983, it was decided by the Council of Ministers to establish so-called "Special Finance Houses" in Turkey. The first Special Finance House started its operations in 1985 and the Association of Special Finance Houses was established in 2001 as a professional organization with a legal status as a public institution. According to the Banking Law No. 5411 which was implemented in November 2005, Special Finance Houses were transformed into "Participation Banks", gaining official "bank" status. After this change, the association was renamed as "Participation Banks Association of Turkey"

[24] This household survey for 1,000 households across 34 cities in Turkey (as well as most other EBRD client countries) includes a question "To what extent do you trust the following institutions?" Responses vary from 1 (complete distrust) to 5 (complete trust) and relate to an array of institutions in a country, including the

Islamic Bank dummy to ensure that the estimated coefficients on the interaction of Islamic Bank with the religious/political variables do not capture spurious correlations.

We find a significant and positive interaction of Islamic Bank dummy with the conservative vote share which implies that in cities where the conservative party vote is higher, firms` willingness to engage more remote Islamic banks is higher.[25] We further find a positive interaction term of Islamic Bank with trust in religious institutions, indicating that in cities with higher trust in religious institutions, firms` willingness to engage more remote Islamic banks is higher.[26] It is interesting that this result is in addition to a significant and positive interaction with the vote share for the conservative party.

Both interactions are also economically meaningful. Indeed, if we define conservative, respectively progressive, areas to have the Main Conservative Party Vote and the Trust in Religious Institutions to be equal to its mean plus, respectively minus, one standard deviation then in conservative areas firms take Islamic banks that are 1.16 km further away than conventional banks, while in progressive areas this is only 0.3 km. In sum, we cannot reject Hypothesis 2.

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presidency, government and cabinet of ministers, parliament, courts, political parties, armed forces, police, banks and the financial system, foreign investors, NGOs as well as religious institutions. We average survey responses for the last question at the city level. Trust in religious institutions correlates negative with trust in any of the other institutions in Turkey.

[25] A structured interview with a manager working at the strategy department of one of the Turkish Islamic banks confirmed that customers are attracted to the bank in accordance with their religious beliefs and that as a consequence these customers travel farther distances to get branch access and also remain loyal over time. When opening new branches the bank would therefore consider (besides its own branch network and those of the competing Islamic banks) not only the economic potential of the city but also its degree of conservatism.

[26] Interactions with trust in other institutions such as banks, courts and/or governmental agencies do not obtain positive coefficients.

B. Robustness: Sub-Samples and Additional Independent Variables

In columns (5) and (6) we re-estimate the last two specifications for firms with fewer than 50 employees, as in such firms religiosity may play a more direct role in steering owners and managers. And indeed for such firms we find somewhat larger estimates implying 1.26 versus 0.14 km extra between Islamic and conventional banks in conservative versus progressive areas.

In column (7) we also estimate a feasible specification for firms with only one bank and in column (8) we limit our sample to 230 firms that have relationships with both Islamic and conventional banks. We find the same effect as in the larger sample, both in statistical and economic significance. Specifically, for the 230 firms with relationships with both Islamic and conventional banks, the Islamic bank branch is 1.3 km farther away than the conventional bank branch.

Finally, in columns (9) to (11) we add interaction terms of the Islamic bank dummy with many additional firm-level variables to thus control for differences in firm population across regions. Specifically, we add an interaction of Islamic Bank and the *Number of Banks* that the company has a relationship with. A firm with many banks may be less willing to travel over longer distances to its Islamic bank. On average, a firm has 2 bank relationships, though the variable varies between 1 and 14. We also add an interaction with the *Number of Industries* in which the company operates, thus capturing the industrial complexity of the firm. Firms present in many industries may prefer large and domestic banks that are more familiar with all

the (domestic) industries the firm operates in and be less willing to spend time travelling to its Islamic bank. The average firm operates in 1.7 different industries, ranging from zero to 18.[27]

We also include interactions with firm size and age. Firm size is measured using both the *Number of Employees* and *Turnover*. *Age* is the time since the establishment of the company. Firm size and age are included because the established literature documents that larger and older firms may prefer large and foreign banks, and not necessarily Islamic banks (e.g., Cole, Goldberg and White (2004)). The average firm (weighted by the number of bank relationships) employs 156 persons and has an annual turnover of 30.2 million EUR, and is 24 years old. In addition, we include the interaction of *Islamic Bank* with a variable *Timeliness of Information* which equals the final sample year plus one, i.e., 2009, minus the year the firm's turnover is reported to Kompass. Firms may differ in the amount and timeliness of the information that is available to their financiers. More opaque firms may prefer on the margin smaller and domestic banks, which are better suited to handle soft information. Finally, we add an interaction term with the *Number of Neighborhood Bank Branches* in a radius of 5 km around the firm to proxy for the competitive environment faced by banks in the neighborhood of the firm.

The results in columns (9) through (11) show that our previous findings on the distance to Islamic bank branches hold when controlling for an array of firm characteristics interacted with the Islamic bank dummy. Most of these interaction terms enter insignificantly while the coefficient on the Islamic bank dummy remains in sign and size unaltered. Only the interaction of *Islamic Bank* with *Number of Neighborhood Bank Branches (5 km)* enters

[27] 11 firms (out of 10,170) did not report any specific industry. See also Table 3 for the presence of the firms across Agriculture (agriculture, forestry or fisheries), Mining, Transportation (transportation, communications or utility services), Manufacturing, Construction, Trade (wholesale and retail trade), or Services.

negatively and significantly, suggesting that the willingness of firms to engage with Islamic banks that are farther away is muted in more competitive banking markets. However, this interaction does not enter significantly in all the regressions. Overall, these results suggest that the extra distance to a selected Islamic bank is independent of firm characteristics. Likely due to a substantial decrease in the number of observations from 15,703 in column (9) to 8,952 in column (10), the estimated coefficient is of lower statistical significance.

C. Robustness: Redefinition of the Dependent Variable

Finally, in Table 5 we take one additional step in making sure that the effect we isolate is coming from the demand side. We redefine the dependent variable to equal 100 if the relevant bank has the closest branch of all of the connected banks, and equals 0 otherwise. In this way we aim to fix the supply side to assess if – for a given geographical configuration of bank branches (on the supply side) – the firm chooses the closest branch or not and how bank characteristics affects this choice.

[Table 5 around here]

The estimates are in Table 5 are consistent with those in Table 4. For example, the estimate in column (1) implies that the Islamic orientation of the relationship bank makes it 22 percentage points less likely that the branch of this bank is actually the closest of all branches in the vicinity. This is consistent with finding that the distance to the Islamic relationship bank branch is higher. Results in columns (2) to (4) similarly map into the equi-numbered columns in Table 4, overall indicating that the extant geographical configuration of bank branches may not affect the impact on distance of the characteristics of the relationship banks.

To conclude Islamic banks are more remote among firms` connected banks and this is especially the case in cities with higher vote shares for the conservative party and higher trust

in religious institutions. Hence, firms may be willing "to walk further" to connect with banks with particular characteristics.

IV. Choice of Banks Given their Distance

A. Main Findings: Hypothesis 3

So far we have studied the relative distance within the set of the banks connected to each firm. By including firm fixed effects we assess deviations from the average distance within the set of connected banks for each firm. This average distance likely reflects the spatial configuration around the firm.

In this section we go one step further and consider the actual choice of banks given (and controlling for) the spatial configuration of banks around the firm. We start from all possible pairings of sample firms and the closest branches of each bank in Turkey. We have 221,937 such pairs and for each we calculated the distance between firm and bank. These 221,937 pairs are our observations in Table 6.

[Table 6 around here]

The dependent variable equals 1 if the firm has a connection with the bank and equals 0 otherwise (we again multiply by 100 to obtain more readable coefficients).

The results in column (1) of Table 6 show a statistically significant and economically meaningful effect of distance on the likelihood that a firm will engage a specific bank. Specifically, the estimated coefficient on *Ln(1 + Distance)* suggests that the probability a bank is engaged decreases by 7.5 percentage points if the distance between the firm and bank increases from 0 to 10 kilometers (= -3.16 * [ln(11) – ln(1)]).

The results in columns (2) and (3) show an important differential effect of the bank's orientation on the relationship between distance and the probability of a firm-bank relationship. Here, we include an Islamic bank dummy and its interaction with distance in column (2), and further add a comprehensive set of 7,653 firm fixed effects in column (3). We find that the effect of distance on the likelihood of a firm-bank relationship is muted in the case of an Islamic bank, yet that there is also a lower probability of a bank-firm relationship in the case of an Islamic bank. The size of the coefficients in column (2) suggests that there is no significant effect of distance on the likelihood that a firm engages a bank in the case of Islamic banks, while there continues to be a strong effect of distance on the probability of firm-bank relationship in the case of conventional banks. The coefficient estimates in column (3), on the other hand, which gauge the intra-firm likelihood of engaging a specific bank suggests a smaller but still significant effect of distance on the likelihood of engaging a bank in the case of Islamic banks. This finding implies that distance plays less of a role when engaging an Islamic bank. Put differently the firm is "willing to walk further" to engage an Islamic bank.

The inclusion of firm fixed effects in column (3) is helpful in establishing that it is possibly the firm that "walks the talk" and decides to engage a bank. Because the firm fixed effects capture the existing spatial bank branch configuration around each firm pinning down the average likelihood a firm – bank connection arises, the changes in the likelihood of a connection between firm and bank given bank branch location can be attributed to demand on the condition that supply is either entirely unresponsive to distance or at least the response is not correlated with bank type.[28]

[28] In addition the location of firms and branches itself is then also considered a given, which may be a reasonable assumption in the short run for each individual firm – bank pair but may clearly not hold in the long run for specific firm and/or bank branch locations.

To take one additional step in disentangling demand from supply, we therefore constrain the supply configuration by limiting the maximum distance that firms are allowed to travel to a branch at 50 km in column (4) and at 5 km in column (5). While these restrictions reduce the sample to 211,810 and 172,191 observations, respectively, the estimates on the terms of interest remain mostly unaffected (though not unexpectedly somewhat larger in absolute value given the smaller distances involved).

Next, we want to investigate if this willingness differs by in areas with different political beliefs and religious sentiments. So Figure 1 displays the probability a firm engages a bank, in percent, as a function of the distance between firm and bank, in kilometers, for all firms and for firms with fewer than 50 employees by bank orientation for areas with a Main Conservative Party Vote or Trust in Religious Institutions above their mean. We use the estimates of the coefficients from a model similar to column (3) in Table 6 (but separately estimate the constant not to have to rely on a random fixed effect coefficient). The displayed estimates are clear. In all cases is distance a weaker factor in determining the probability a bank is engaged for an Islamic bank than for a conventional bank (that in the former case probabilities become negative is a matter of the intercept and no immediate reason for concern), and comparing with the estimates in column (3) suggests the effect is stronger for smaller firms and in those highlighted conservative areas. In sum, we cannot reject Hypothesis 3.

B. Robustness: Additional Independent Variables and Sub-Samples

In column (6) we once more add bank size, nationality and ownership. While the coefficient on the interaction of distance with Islamic bank is no longer statistically significant, the coefficients on the interactions of distance with bank size, nationality and ownership are, and

negative, positive and positive, respectively. The latter estimates imply that when engaging a small, foreign or state bank distance again does not play a significant role, in contrast to when the engagement involves a large, domestic or private bank where distance substantially reduces the probability that such a bank engagement will be observed. But recall that there are only four Islamic banks that are mostly large, and all foreign and private, so that the Islamic characteristic is easily "spanned" by these three other.

In column (7) we also estimate a feasible specification for firms with only one bank and in column (8) we limit our sample to 230 firms that have relationships with both Islamic and conventional banks. In column (7) we find the same effect as in the larger sample, both in statistical and economic significance, but for the 230 firms with relationships with both Islamic and conventional banks, the coefficient on the interaction is no longer estimated precisely enough. Finally, in column (9) we add the set of salient firm-level variables but find the estimates mostly unaffected.

V. Conclusions

This paper assesses the importance of bank orientation for the distance bank clients are willing to accept to the nearest branch of the lender. Specifically, we gauge the importance of bank orientation for (i) the distance between firm and the banks it has relationships with and (ii) the effect that distance between firm and bank branches has on the likelihood that the firm contracts with a specific bank. We find consistent results across the two sets of exercises. In the first section we found that ("on the intensive margin") among connected banks Islamic ones were located farther afield from the firm. In the second section we showed that ("on the extensive margin") the engagement of a bank by a firm is less affected by distance when the bank is Islamic. Both findings vividly illustrate that banks with certain characteristics are worth for firms "walking the extra mile for".

For policymakers these findings may indicate that from a corporate finance perspective competition between a variety of financial institutions should be fostered and that the physical presence of banks should not be made too costly or impeded. Distance still matters and firms incur seemingly sizeable costs (lest engagement probabilities would not be affected so strongly) to engage banks with certain characteristics.

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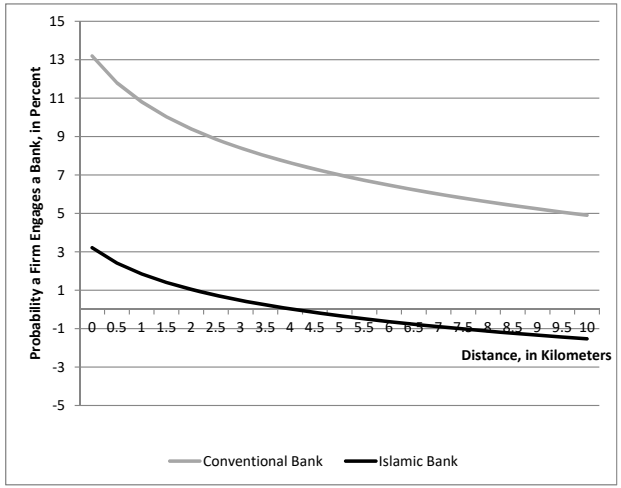
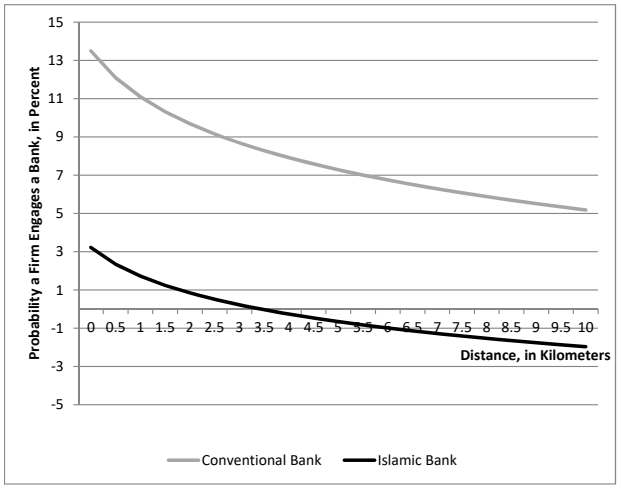
Fig.1 Explaining If the Firm Has a Connection with the Bank, by Firm Type and by Political Beliefs and Religious Sentiments. The figure displays the probability a firm engages a bank, in percent, as a function of the distance between firm and bank, in kilometers, for all firms and for firms with fewer than 50 employees by bank orientation for areas with a Main Conservative Party Vote or Trust in Religious Institutions above their mean. We use the estimates of the coefficients from a model similar to column (3) in Table 6 (we separately estimate the constant not to have to rely on a random fixed effect coefficient).

Panel A. For All Firms

Panel A.1. High Main Conservative Party Vote (> 42%, mean)

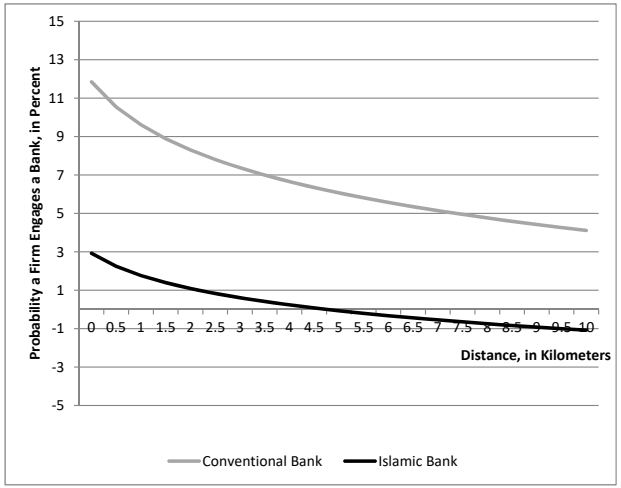


Panel A.2. High Trust in Religious Institutions (> 0.36%, mean)



Panel B. For Firms with Fewer than 50 Employees

Panel B.1. High Main Conservative Party Vote (> 42%, mean)



Panel B.2. High Trust in Religious Institutions (> 0.36%, mean)

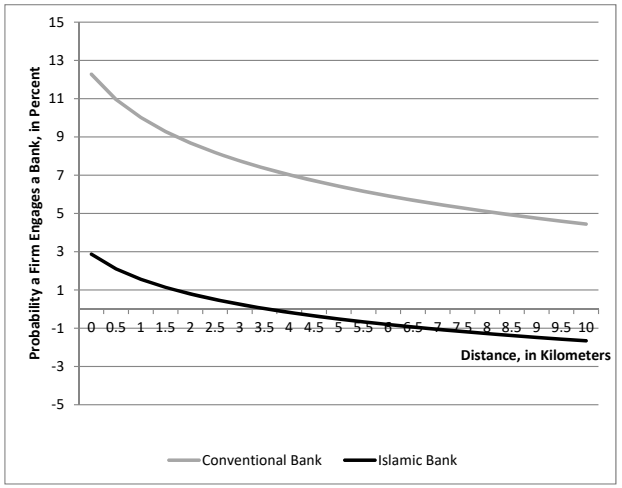


Table 1

Distance for Sample Firms.

This table provides the distance in kilometers between each of the 7,653 sample firms and the indicated bank branches that are closest: (1) one branch for each bank operating in Turkey, (2) when the firm has a connection with the bank, and (3) unconditionally (i.e., the closest branch in the vicinity not conditioning on taking: the closest branch from all banks, as in measure 1, or the closest branch from all relationship banks, as in measure 2). The number of observations in (3) is larger than 7,653 because some bank branches are located very close to each other in which case their distance to the firm will be calculated to be the same (due to the resolution of the raw address data and the geocoding procedure, two or more bank branches may have the same coordinates if they are in the same building for example). The distance calculated is the shortest distance between two points on Earth along its surface (i.e., a great-circle distance that is calculated with a 0.5 percent level of precision). The table provides the number of observations, the mean, the median, the standard deviation, the minimum and the maximum for All Banks, and for Islamic and Conventional Banks. A bank is defined to be Islamic if the bank declares itself to be a participation bank that carries out banking activities based on the principle of profit and loss participation. Source: www page of the "Participation Banks Association of Turkey".

Distance in kilometers between each of the 7,653 sample firms and the indicated bank branches that are closest	**Number of Observations**	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**
All Banks						
(1) One branch for each bank operating in Turkey	221,937	12.6	1.5	54.6	0	1,286.4
(2) The firm has a connection with the bank	15,918	1.7	0.7	6.7	0	506.6
(3) Unconditionally	11,623	0.6	0.2	1.9	0	54.9
Islamic Banks						
(1) One branch for each bank operating in Turkey	30,612	4.1	1.3	11.7	0	244.4
(2) The firm has a connection with the bank	306	3.3	1.2	9.4	0	94.6
(3) Unconditionally	812	0.5	0.3	0.9	0	11.3
Conventional Banks						
(1) One branch for each bank operating in Turkey	191,325	13.9	1.6	58.5	0	1,286.4
(2) The firm has a connection with the bank	15,612	1.7	0.7	6.6	0	506.6
(3) Unconditionally	10,811	0.6	0.2	1.9	0	54.9

Table 2

Firm-Bank Connections.

This table provides the total number of firms that have a connection with an Islamic versus Conventional bank, and with other bank types, i.e., Large versus Small, Foreign versus Domestic, and State versus Private. The total number always equals 7,653. The lower panel of the Table defines the bank categorizations.

A	**B**	**Only A**	**Only B**	**Mixed**
Islamic Bank				
Islamic	Conventional	52	7,371	230
Other Bank Characteristics				
Large	Small	6,869	93	691
Foreign	Domestic	232	6,088	1,333
State	Private	154	6,613	886

Category	**Definition (and *Source*)**
Islamic	A bank is defined to be Islamic if the bank declares itself to be a participation bank and carries out banking activities based on the principle of profit and loss participation (*Source*: www page of the "Participation Banks Association of Turkey"). All other banks are classified as conventional.
Large	A bank is defined to be large if its assets are among the top eight domestic banks at the end of 1998 (one of these banks was closed but the remaining seven still were the top seven domestic banks by assets by the end of 2008). By the size of their assets abroad all foreign banks are also classified as large banks (*Source*: www page of the "Banks Association of Turkey"). All other banks are classified as small.
Foreign	A bank is defined to be foreign (domestic) if the majority of equity is owned by foreign (Turkish) individuals or institutions.
State	A bank is defined to be state-owned (private) if the majority of equity is owned by the government (private individuals or institutions).

Table 3
Summary Statistics.

This table provides the variable names, definitions, units and for the three different samples the number of observations (Obs.), the mean, the standard deviation (St. Dev.), the minimum (Min.) and the maximum (Max.). There are different bank characteristics according to bank orientation, nationality, ownership and size (see Table 2 for definitions). DEM and FRF values are converted to EUR using official exchange rates. USD and TRL values are converted to EUR using the Turkish Central Bank official annual average exchange rates. 2,620 companies report their turnover to be under 1 million TRL. For these firms we set turnover equal to 500,000 TRL. The industry classification is based on the two-digit Kompass industry classification.

			(1) Pairings of Sample Firms and the Bank Branch that Is Closest of Each With-The-Firm Connected Banks					(2) All Possible Pairings of Sample Firms and the Closest Branches of Each Bank in Turkey					(3) Pairings of Sample Firms and the Bank Branch That is Closest (Unconditionally)				
Variable Name	**Definition**	**Unit**	**Obs.**	**Mean**	**St. Dev.**	**Min.**	**Max.**	**Obs.**	**Mean**	**St. Dev.**	**Min.**	**Max.**	**Obs.**	**Mean**	**St. Dev.**	**Min.**	**Max.**
Distance	Geographic distance calculated using coordinates of firms and bank branches. The distance calculated is the shortest distance between two points on Earth along its surface (i.e., a great-circle distance that is calculated with a 0.5 percent level of precision)	km	15,918	1.7	6.7	0	506.6	221,937	12.6	54.6	0	1,286.4	11,623	0.6	1.9	0	54.9
100 * Ln(1+Distance)		ln km	15,918	67.4	61.0	0	623.0	221,937	126.8	116.1	0	716.0	11,623	32.3	45.0	0	402.4
Islamic Bank																	
Islamic Bank	=1 if the bank is an Islamic bank, = 0 otherwise.	0/1	15,918	0.02	0.14	0	1	221,937	0.14	0.34	0	1	11,623	0.07	0.25	0	1
Other Bank Characteristics																	
Large Bank	=1 if the bank is a large bank, = 0 otherwise.	0/1	15,918	0.95	0.22	0	1	221,937	0.72	0.45	0	1	11,623	0.88	0.33	0	1
Foreign Bank	=1 if the bank is a foreign bank, = 0 otherwise.	0/1	15,918	0.11	0.32	0	1	221,937	0.45	0.50	0	1	11,623	0.30	0.46	0	1
State Bank	=1 if the bank is a state bank, = 0 otherwise.	0/1	15,918	0.07	0.25	0	1	221,937	0.14	0.34	0	1	11,623	0.17	0.37	0	1
Firm Region Characteristic																	
East, Southeast and Black Sea	= 1 if the company operates in the East Anatolia, South East Anatolia or Black Sea region, = 0 otherwise	0/1	15,918	0.03	0.18	0	1	221,937	0.03	0.17	0	1	11,623	0.08	0.27	0	1
Mediterranean	= 1 if the company operates in the Mediterranean region, = 0 otherwise	0/1	15,918	0.03	0.18	0	1	221,937	0.03	0.17	0	1	11,623	0.05	0.21	0	1
Aegean	= 1 if the company operates in the Aegean region, = 0 otherwise	0/1	15,918	0.08	0.28	0	1	221,937	0.08	0.27	0	1	11,623	0.08	0.27	0	1
Marmara	= 1 if the company operates in the Marmara region (which includes Istanbul), = 0 otherwise	0/1	15,918	0.76	0.43	0	1	221,937	0.77	0.42	0	1	11,623	0.69	0.46	0	1
Central Anatolia	= 1 if the company operates in the Central Anatolia region, = 0 otherwise	0/1	15,918	0.09	0.29	0	1	221,937	0.09	0.29	0	1	11,623	0.10	0.30	0	1
Firm City Characteristic																	
Main Conservative Party Vote	The percentage of votes in local elections in 2004 received by the Justice and Development Party (Turkish: Adalet ve Kalkınma Partisi, AK Parti) which identifies itself as a conservative-democrat party	%	15,918	0.42	0.05	0.16	0.59	221,937	0.42	0.05	0.16	0.59	11,623	0.42	0.05	0.16	0.59
Trust in Religious Institutions	Answers obtained from Life in Transition Survey (LITS) 2006 conducted in 16 countries in Central and Eastern Europe. Scale for the answers are as follows: complete distrust=1, some distrust=2, neither trust nor distrust=3, some trust=4, complete trust=5. Survey was condusted in 34 cities in Turkey and average of the answers for each city are used in regressions.	-	15,305	3.55	0.34	2.67	4.85	213,788	3.54	0.33	2.67	4.85	10,995	3.61	0.39	2.67	4.85
Firm Characteristics																	
Number of Banks	The number of banks that the company has relationships with	-	15,918	2.6	1.1	1	14	221,937	2.1	1.0	1	14	11,623	2.1	1.1	1	14
Number of Neighborhood Bank Branches (5 km)	The number of bank branches that are in 5 km radius	-	15,918	265.5	222.7	0	783	221,937	271.5	222.8	0	783	11,623	264.7	239.0	0	783
Number of Industries	The number of industries the company operates in	-	15,918	1.7	1.1	0	18	221,937	1.7	1.1	0		11,623	1.7	1.2	0	18
Number of Employees	Number of employees in the company	-	15,721	156	607	1	30,000	219,153	145	609	1	30,000	11,471	165	842	1	30,000
Age	Time since the establishment of the company	Years	15,665	23.9	14.1	1	146	218,341	23.3	13.8	1	146	11,441	23.1	14.0	1	146
Turnover	Company turnover	EUR	9,107	30.2E+6	844.0E+6	2.5E+3	54.1E+9	124,932	31.1E+6	869.0E+6	2.5E+3	54.1E+9	6,751	24.3E+6	696.0E+6	2.5E+3	54.1E+9
Timeliness of Information	Timeliness of the turnover reported by the company, calculated as 2009 - year the turnover amount is reported	Years	9,107	5.7	2.1	1	10	124,932	5.9	2.1	1	10	6,751	5.7	2.1	1	10
Firm Industry																	
Agriculture	= 1 if the company operates in an agriculture, forestry or fisheries industry, = 0 otherwise	0/1	15,918	0.03	0.18	0	1	221,937	0.03	0.17	0	1	11,623	0.04	0.19	0	1
Mining	= 1 if the company operates in a mining industry, = 0 otherwise	0/1	15,918	0.02	0.15	0	1	221,937	0.02	0.14	0	1	11,623	0.02	0.15	0	1
Transportation	= 1 if the company operates in a transportation, communications or utility services industry, = 0 otherwise	0/1	15,918	0.03	0.18	0	1	221,937	0.03	0.18	0	1	11,623	0.03	0.16	0	1
Manufacturing	= 1 if the company operates in a manufacturing industry, = 0 otherwise	0/1	15,918	0.88	0.33	0	1	221,937	0.88	0.33	0	1	11,623	0.88	0.32	0	1
Construction	= 1 if the company operates in a construction industry, = 0 otherwise	0/1	15,918	0.02	0.15	0	1	221,937	0.02	0.15	0	1	11,623	0.02	0.15	0	1
Trade	= 1 if the company operates in a wholesale and retail trade industry, = 0 otherwise	0/1	15,918	0.14	0.35	0	1	221,937	0.14	0.35	0	1	11,623	0.14	0.35	0	1
Services	= 1 if the company operates in a services industry, = 0 otherwise	0/1	15,918	0.04	0.20	0	1	221,937	0.04	0.20	0	1	11,623	0.04	0.20	0	1

Table 4

Explaining the Distance between the Firm and the Closest Branch of Each of its Connected Banks.

The estimates in this table come from ordinary least squares models. The dependent variable is 100 times the logarithm of 1 plus the distance in kilometers between the firm and the closest branch of each of its connected banks. All independent variables are defined in Table 3. Other Bank Characteristics include dummies for being a Large Bank, Foreign Bank and/or State Bank. "Yes" indicates that the set of bank characteristics or the set of fixed effects is included. "No" indicates that the set is not included. The estimated coefficients are listed in the first row, standard errors are reported in the second row between brackets, and the corresponding significance levels are in the first row adjacent to the estimated coefficients. *** Significant at 1%, ** significant at 5%, * significant at 10%. Conservative (Progressive) Areas are defined as having the Main Conservative Party Vote and the Trust in Religious Institutions to be equal to its mean plus (minus) one standard deviation.

Samples	*All Firms*				*Firms with < 50 Employees*		*Firms with only One Bank*	*Firms with both Islamic and Conventional Banks*	*Firms with Characteristics Available*		
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**
Islamic Bank	29.2 ***	30.6 ***	6.1 **	-343.1 ***	7.8 **	-606.0 ***	36.3 ***	30.6 ***	22.0 **	43.3	39.2 ***
	(3.5)	(2.9)	(2.9)	(125.3)	(3.2)	(153.0)	(8.5)	(3.7)	(10.5)	(51.1)	(11.7)
Islamic Bank * Main Conservative Party Vote				457.4 ***		772.1 ***					
				(17.4)		(186.8)					
Islamic Bank * Trust in Religious Institutions				29.5 *		55.5 ***					
				(0.3)		(20.0)					
Islamic Bank * Mediterranean				88.2 ***		44.9					
				(20.2)		(27.7)					
Islamic Bank * Aegean				126.1 ***		172.7 ***					
				(28.0)		(35.7)					
Islamic Bank * Marmara				79.6 ***		123.4 ***					
				(24.8)		(30.5)					
Islamic Bank * Central Anatolia				16.0		7.3					
				(12.9)		(16.2)					
Islamic Bank * Number of Banks									0.9	-8.6	1.3
									(7.6)	(10.7)	(7.6)
Islamic Bank * Number of Industries									1.4	-0.7	1.4
									(5.6)	(8.6)	(5.6)
Islamic Bank * Number of Employees									1.9	-3.5	0.0
									(2.1)	(3.6)	(2.2)
Islamic Bank * Age										5.4	
										(7.8)	
Islamic Bank * Turnover										0.2	
										(3.1)	
Islamic Bank * Timeliness of Information										-8.0	
										(9.2)	
Islamic Bank * Number of Neighborhood Bank Branches (5 km)											-0.1 ***
											(0.0)
Other Bank Characteristics	No	No	Yes	No	Yes	No	No	No	No	No	No
Firm Fixed Effects	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Number of Firm Fixed Effects	0	7,653	7,653	7,372	4,507	4,375	0	230	7,547	4,231	7,547
Number of Observations	15,918	15,918	15,918	15,305	8,943	8,667	2,379	688	15,703	8,952	15,703
R-squared	0.004	0.004	0.044	0.009	0.042	0.014	0.007	0.039	0.005	0.003	0.008
Extra Distance to Islamic Bank, in Kilometers	*1.33*	*1.34*	*1.05*		*1.07*		*1.42*	*1.34*	*1.23*	*1.53*	*1.47*
In Conservative Areas				*1.16*		*1.26*					
In Progressive Areas				*0.33*		*0.14*					

Table 5

Explaining If the Relevant Bank Has the Closest Branch of All of the Connected Banks

The estimates in this table come from ordinary least squares models. The dependent variable equals 100 if the relevant bank has the closest branch of all of the connected banks, and equals 0 otherwise. All independent variables are defined in Table 3. Other Bank Characteristics include dummies for being a Large Bank, Foreign Bank and/or State Bank. "Yes" indicates that the set of bank characteristics or the set of fixed effects is included. "No" indicates that the set is not included. The estimated coefficients are listed in the first row, standard errors are reported in the second row between brackets, and the corresponding significance levels are in the first row adjacent to the estimated coefficients. *** Significant at 1%, ** significant at 5%, * significant at 10%. Conservative (Progressive) Areas are defined as having the Main Conservative Party Vote and the Trust in Religious Institutions to be equal to its mean plus (minus) one standard deviation.

Samples	*All Firms*				*Firms with < 50 Employees*		*Firms with both Conventional and Islamic Banks*	*Firms with Characteristics Available*		
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Islamic Bank	-22.2 ***	-41.2 ***	-17.8 ***	-162.1	-20.7 ***	88.0	-41.2 ***	-71.5 ***	-63.8	-68.7 ***
	(2.9)	(4.9)	(5.1)	(220.3)	(6.7)	(322.7)	(4.3)	(17.4)	(77.8)	(19.6)
Islamic Bank * Main Conservative Party Vote				110.9		11.9				
				(243.0)		(394.2)				
Islamic Bank * Trust in Religious Institutions				14.3		-36.6				
				(30.6)		(42.2)				
Islamic Bank * Mediterranean				12.7		26.1				
				(35.4)		(58.3)				
Islamic Bank * Aegean				4.3		-14.5				
				(49.2)		(75.3)				
Islamic Bank * Marmara				30.9		-11.9				
				(43.5)		(64.4)				
Islamic Bank * Central Anatolia				-13.4		0.2				
				(22.6)		(34.2)				
Islamic Bank * Number of Banks								27.9 **	21.8	28.0
								(12.6)	(16.3)	(12.6)
Islamic Bank * Number of Industries								-11.6	-0.8	-11.6
								(9.3)	(13.1)	(9.3)
Islamic Bank * Number of Employees								1.3	5.5	1.0
								(3.5)	(5.5)	(3.6)
Islamic Bank * Age									11.8	
									(11.8)	
Islamic Bank * Turnover									-4.4	
									(4.7)	
Islamic Bank * Timeliness of Information									5.4	
									(13.9)	
Islamic Bank * Number of Neighborhood Bank Branches (5 km)										52.0
										(0.5)
Other Bank Characteristics	No	No	Yes	No	Yes	No	No	No	No	No
Firm Fixed Effects	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Firm Fixed Effects	0	7,653	7,653	7,372	4,507	4,375	230	7,547	4,231	7,547
Number of Observations	15,918	15,918	15,918	15,305	8,943	8,667	688	15,703	8,952	15,703
R-squared	0.004	0.004	0.030	0.009	0.033	0.013	0.169	0.009	0.008	0.009
Lower Probability Engaged Islamic Bank Is Closest, in Percent	*-22.2*	*-41.2*	*-17.8*		*-20.7*		*-41.2*	*-71.5*	*-63.8*	*-68.7*
In Conservative Areas				*-45.0*		*-60.5*			*for "zero characteristic" firms*	
In Progressive Areas				*-85.2*		*-13.3*				

Table 6

Explaining If the Firm Has a Connection with the Bank

The estimates in this table come from ordinary least squares models. The dependent variable equals one hundred if the firm has a connection with the bank and equals zero otherwise. All independent variables are defined in Table 3. Other Bank Characteristics include dummies for being a Large Bank, Foreign Bank and/or State Bank. "Yes" indicates that the set of bank characteristics or the set of fixed effects is included. "No" indicates that the set is not included. The estimated coefficients are listed in the first row, standard errors are reported in the second row between brackets, and the corresponding significance levels are in the first row adjacent to the estimated coefficients. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Sample	*All Firms*						*Firms with One Bank*	*Firms with both Conventional and Islamic Banks*	*Firms with Characteristics Available*
				Max. Distance < 50 km	*Max. Distance < 5 km*				
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Ln(1+Distance)	-3.16 ***	-3.59 ***	-5.18 ***	-8.80 ***	-14.82 ***	-1.08 ***	-2.55 ***	-4.06 ***	-3.69 ***
	(0.05)	(0.05)	(0.06)	(0.09)	(0.18)	(0.08)	(0.07)	(0.33)	(0.06)
Ln(1+Distance) * Islamic Bank		3.49 ***	1.72 ***	3.13 ***	6.82 ***	0.09	0.96 ***	-0.24	3.11 ***
		(0.18)	(0.18)	(0.23)	(0.44)	(0.17)	(0.24)	(1.34)	(0.24)
Ln(1+Distance) * Large Bank						-1.65 ***			
						(0.25)			
Ln(1+Distance) * Foreign Bank						1.46 ***			
						(0.25)			
Ln(1+Distance) * State Bank						1.39 ***			
						(0.26)			
Islamic Bank		-11.75 ***	-10.36 ***	-11.84 ***	-14.22 ***	-1.47 ***	-5.13 ***	17.82 ***	-11.76 ***
		(0.25)	(0.25)	(0.28)	(0.39)	(0.23)	(0.32)	(1.70)	(0.34)
Number of Banks									7.13 ***
									(0.16)
Number of Industries									-0.10
									(0.15)
Number of Employees									0.29 ***
									(0.06)
Age									-0.11
									(0.14)
Turnover									-0.01
									(0.05)
Timeliness of Information									-1.40 ***
									(0.17)
Other Bank Characteristics	No	No	No	No	No	Yes	No	No	No
Firm Fixed Effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Number of Firm Fixed Effects	0	0	7,653	7,652	7,531	7,653	2,379	230	0
Number of Observations	221,937	221,937	221,937	211,810	172,191	221,937	68,991	6,670	122,699
R-squared	0.020	0.033	0.032	0.033	0.052	0.255	0.022	0.071	0.005